Settlement Communication
Subject to Rule 408, Federal Rules of Evidence

Response of Green Bay Metropolitan Sewerage District (GBMSD) to EPA's Technical Questions.

I. Introductory Statement

The purpose of this memorandum is to provide GBMSD's answers to EPA's technical questions raised during the negotiations between EPA and GBMSD. These negotiations involve the terms and conditions of the draft Administrative Order on Consent proposed by EPA in this pending enforcement matter.

Please note that most, if not all, the technical questions posed by EPA are focused on voluntary actions which GBMSD has initiated to mitigate the risk of a future GAC failure ("Voluntary Actions"). These Voluntary Actions were undertaken by GBMSD following the damage to the GAC caused by heat associated with moisture remaining in the carbon after a washing and drying the carbon (the "Causal Factor"). Many of the Voluntary Actions relate to conditions which are not directly related to the Causal Factor and go "above and beyond" what is currently required in the federally enforceable air permit, the terms and conditions of EPA's approval for the GAC ("EPA Approval") and the Site Specific Monitoring Plan required for the EPA Approval (collectively the "Legal Requirements").

GBMSD has shared information with EPA about these Voluntary Actions to assure EPA that these Actions, together with the applicable Legal Requirements, provide the necessary assurance that GBMSD is taking all appropriate actions to mitigate the risk of a future GAC failure.

II. EPA's Technical Questions and GBMSD's Answers

The following is a list of questions raised by EPA during negotiations regarding the Administrative Order on Consent. GBMSD's answer are listed below in bold following each question.

1) During our call, GBMSD stated that an alarm is triggered when the pressure drop across the GAC bed is 8.4" of water column (wc). Only the 11" wc trigger is shown on the GAC "Interlocks and Responses" table. Why isn't the 8.4" wc alarm shown in the table? What action is taken when the 8.4" wc alarm is triggered? Is the averaging time for the 8.4" wc trigger level based on a 12-hr block average like the 11" wc trigger or some other averaging time?

   Why isn't the 8.4" wc alarm shown in the table?
   The 8.4" was not included in the table as it was added by NEW Water as an alert notification to operating staff of an increase in differential pressure.

   What action is taken when the 8.4" wc alarm is triggered?
   When the alert notification is reached, staff begin to evaluate timing of carbon replacement.

   Is the averaging time for the 8.4" wc trigger level based on a 12-hr block average like the 11" wc trigger or some other averaging time?
   The 8.4" alert notification is instantaneous.

2) How were the in-bed temperature monitor alarm thresholds established? Is there an averaging time associated with the trigger temperatures (e.g., one- hour average)? What is the averaging period?

How were the in-bed temperature monitor alarm thresholds established?
Recommendation from the incinerator system manufacturer.

Is there an averaging time associated with the trigger temperatures (e.g., one- hour average)?
The alert notification is instantaneous.

What is the averaging period?
The alert notification is instantaneous.

3) Was the CO monitoring at the GAC (high differential CO concentration between GAC inlet and outlet and high CO at GAC inlet and/or outlet and high carbon bed temperatures) implemented as a result of the GAC heat excursion event? Or were these monitors in place before the event?

Was the CO monitoring at the GAC (high differential CO concentration between GAC inlet and outlet and high CO at GAC inlet and/or outlet and high carbon bed temperatures) implemented as a result of the GAC heat excursion event?
No

Or were these monitors in place before the event?
Yes

4) The root cause analysis letter stated that GBMSD was planning on optimizing SO2 and PM removal to protect GAC performance and reduce the likelihood of needing to wash the carbon. What, if anything, was done to optimize SO2 and PM removal? The letter stated that the optimizing was scheduled for March 2020What, if anything, was done to optimize SO2 and PM removal?
The following items were implemented based on recommendation from the scrubber system manufacturer: 1) An additional cone was added to the venturi section of the scrubber; 2) Scrubber water flow rates and pressures were adjusted; 3) The pH set point that controls caustic feed to the scrubber system was adjusted; 4) A larger spray nozzle was added to the demister section of the scrubber.

5) The GAC shutdown due to a low differential temperature (dT) between the scrubber outlet and the GAC inlet is set to < 15°F in the "GAC Parameter Interlocks and Responses" table. The EPA approved alternative monitoring plan provides that a minimum dT should be 45°F for a 12-hour block average (per manufacturer's recommendation). Is there an alarm for the 45°F dT? Is the 15°F trigger dT based on a 12-hour block average or some other averaging time? How was 15°F trigger dT established?

Is there an alarm for the 45°F dT?
No. The system is designed to maintain a minimum differential temperature of 45°F over a 12-hour block average.

Is the 15°F trigger dT based on a 12-hour block average or some other averaging time?
The 15°F is an instantaneous low-low alarm point.

How was 15°F trigger dT established?
Recommendation from the incinerator system manufacturer.

6) Could GBMSD indicate which GAC parameters were added to the "GAC Parameter Interlocks and Responses" table as a result of the temperature excursion event in the GAC? Also, describe how the trigger value was determined.

Could GBMSD indicate which GAC parameters were added to the "GAC Parameter Interlocks and Responses" table as a result of the temperature excursion event in the GAC?
The following parameters were added as a result of the thermal excursion.

- **TIT-0608: high temperature at demister inlet (>165°F) – GAC in "online" mode.**
- **TIT-0666: high temperature at adsorber inlet (>165°F) – GAC in "online" mode.**
- **TIT-0710: high temperature at adsorber outlet (>165°F) – GAC in "manual" mode.**
- **TIT-0708/0709: high temperature in the carbon bed adsorber (>165°F) – GAC in "manual" mode.**
- **AIT-0716C: high differential of CO concentration (>60 ppm for 5 minutes) – GAC in a "manual" mode.**
- **TIT-0708/0709: high temperature in the carbon bed adsorber (>155°F for 1 minute) – GAC in "offline" mode.**
- **AIT-0716C: high differential of CO concentration (>60 ppm for 5 minutes) – GAC in "offline" mode.**
- **AIT-0716A of 0716B: high inlet or outlet CO (200 ppm for 5 minutes) – GAC in "offline" mode.**

Also, describe how the trigger value was determined.
Recommendation from the incinerator system manufacturer.

I am the Executive Director of GBMSD. The answers to these technical questions are based upon input from various knowledgeable employees of GBMSD and are accurate to the best of my information and belief.

Dated this 21st day of June, 2021.

Thomas W. Sigmund

Thomas W. Sigmund, P.E.
Executive Director
Green Bay Metropolitan Sewerage District